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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,599	04/04/2007	Alain Guillard	Serie 6421	4539
40582	7590	03/28/2011		
American Air Liquide, Inc. Intellectual Property Dept. 2700 Post Oak Boulevard Suite 1800 Houston, TX 77056			EXAMINER GHOSH, INDRAJIT	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,599

Applicant(s)

GUILLARD ET AL.

Examiner

INDRAJIT GHOSH

Art Unit

4166

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/20/2006, 04/04/2007
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the preliminary amendment filed on 06/20/2006. Currently, claims 1-10 have been cancelled and claims 11-20 have been added and are pending.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the means for supplying the motor with a variable-frequency AC current" (claim 11) and the different types of windings claimed (claims 13 and 19) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because there are references to items that do not exist in the drawings (i.e. CM, E, and LE). Correction is required. See MPEP § 608.01(b).
4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if

the required "Sequence Listing" is not submitted as an electronic document on compact disc).

5. The disclosure is objected to because of the following informalities: The headings above are not included. No cross-reference to related applications is included. A section with a brief description of the drawings is not included. Starting on line 30 of page 4, the statement "...at least 6 bar, typically between 3 and 5.5 bar," does not make sense as the range given is less than 6 bar. On line 32 of page 6, it is suggested that "...between $4 - 6 \times 10^5$ Pa and 30×10^5 Pa..." simply be changed to "...between 4×10^5 Pa and 30×10^5 Pa..." as this range includes 6×10^5 Pa. Starting on line 8 of page 8 the statement "...feed the mixing column and/or the mixing column." is redundant. Appropriate correction is required.

Claim Objections

6. Claims 11-14 are objected to because of the following informalities: In claim 11, on line 4, "it" should be changed to "the air", and on line 7, "it" should be changed to "the air separation unit". Claims 12 and 13 are objected to because they depend from an objected claim. In claim 14, on line 2, "an air separation unit" should be changed to "the air separation unit of claim 11" and on line 4 "the air separation unit of claim 11" should be removed. Appropriate correction is required.

7. Claim 20 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). In this case, the claim depends from both claim 15 and claim 16. Accordingly, claim 20 has not been further treated on the merits and is considered withdrawn until fixed.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 13 recites the broad recitation "of the type having a single primary winding or of the type having several primary windings", and the claim also recites "in particular a Dahlander winding" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bianchi et al. (U.S. Patent 6,119,482) in view of Hill et al. (U.S. Patent 5,730,778).

Bianchi et al. disclose in the figures an integrated air-separation/metal-production installation comprising an air separation unit, which comprises a system of columns (MP, DC, CM), means for feeding the unit at least partially with compressed air coming from at least one booster compressor (C_1 , C_2), means for purifying (E) and cooling (LE) the air, means for sending the air to one column of the column system and means for withdrawing a gaseous product (O) from one column of the column system. It also comprises a metal production unit (FM), a main compressor (S) that compresses air intended for the air separation unit and the metal production unit, means for sending the air from the main compressor to the booster compressor, and means for sending the gaseous product coming from the air separation unit to the metal production unit. Although the booster compressors of Bianchi et al. are driven by turbines (T_1 , T_2) Bianchi does not disclose the use of an electric motor with variable speeds and windings. Hill et al. disclose in Figure 10, a compressor (13) that is being driven by a variable speed motor (79) that can be an AC induction motor with a variable frequency/variable voltage supply (column 6, lines 50-67). It is inherent that this motor would have to have either a single primary winding or several primary windings. Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have driven the booster compressors of Bianchi et al. with the motor of Hill et al. in order to use electricity to run the booster compressors, which would allow for lower operation costs. It is also inherent that since there are components that require variable-frequency AC current, that the apparatus must have means for supplying the motor with variable-frequency AC current.

15. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bianchi et al. (U.S. Patent 6,119,482) in view of Hill et al. (U.S. Patent 5,730,778) and further in view of Halimi et al. (U.S. Patent 5,560,208).

The combined teachings of Bianchi et al. and Hill et al. disclose all claimed limitations but fail to mention that the start up device runs faster during startup than normal state. Halimi et al. disclose, in Figure 1, a turbocharging system (10) for a diesel engine (12) that uses an electric motor (42) that facilitates start up of the engine. When the engine starts from idle, the motor runs at a high speed to increase turbocharger output. Once the exhaust from the engine can provide enough air to properly run the turbocharger, the motor is turned off, thus turning at a lower speed when the engine is at steady operation. Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Halimi et al. to run Bianchi's startup device faster during startup than normal state, in order to operate the apparatus as effectively as possible by providing more oxygen to the metal production unit during start up. This would mean the speed of and the frequency of current to the motor higher during startup of the metal production unit than during steady operation of the unit.

Regarding claim 19, it is noted that Hill et al teach several windings differently coupled, by stating that the motor can be a pole changing AC induction motor with two or three operating speeds, which requires different windings to accomplish these different applications.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Janicek et al. (U.S. Patent 6,239,523 B1) disclose a motor with multiple windings. Guillard (U.S. Patent 6,122,932) disclose an integrated furnace and air separation plant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to INDRAJIT GHOSH whose telephone number is 571-270-1879. The examiner can normally be reached on Monday - Thursday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

